

In progress draft dated June 2, 2010.							
#1 Objective for Winter-run Chinook Salmon - Juvenile Productivity							
Global Goal: Winter- run Chinook salmon will see substantial increases in their 1) abundance, 2) spatial distribution, 3) life history diversity, and 4) population productivity.							
NMFS Recovery Plan Overarching Goal: Increase Productivity of the Sacramento River winter-run Chinook salmon ESU, DPS to support its removal from the Federal List of Endangered and Threatened Wildlife (50 C.F.R. 17.11).							
NMFS Population Productivity Objective: In general, viable populations should demonstrate a combination of population growth rate and abundance that produces an acceptable probability of population persistence. Specifically, viable populations should meet the low extinction risk levels for the population decline and population size criteria described in Table 4-1. (See NMFS Draft Recovery Plan for further details).							
Preliminary estimates of abundance goals by NMFS are: 1. Attainment of the winter-run Chinook salmon global abundance goal will occur by 2060 with achievement of 6-year geometric mean escapement levels of: 20,000 in the mainstem Sacramento River with no year below 5,000; 3,000 in the Battle Creek watershed with no year below 500; and 500 in a third dependent population with no year below 200.							
BDCP Species Goal	Increase the productivity of all populations of winter-run juvenile Chinook salmon rearing in and migrating through the Delta.						
BDCP Objectives: <i>Note that blank () variables need additional input on appropriate percentages, measurement, and methodologies intervals for the objectives.</i>	1) Increase the 5 year running average survival rate of juvenile winter-run Chinook salmon migrating between Knight’s Landing and Chipps Island by: <ul style="list-style-type: none">• % in wet years,• % in above normal years,• % in below normal years,• % in dry years,• % in critical years relative to the most recent five-year average of survival in the relevant water year type (e.g. for dry year objectives, the average survival in the most recent five dry years would form the baseline). 2) Increase growth of winter-run smolt between Knights Landing and Chipps Island by: <ul style="list-style-type: none">• % in wet years,• % in above normal years,• % in below normal years,• % in dry years,• % in critical years relative to the most recent five-year average of growth in the relevant water year type (e.g. for dry year objectives, the average growth in the most recent five dry years would form the baseline).						
Stressors/Limiting Factors: <i>Note: Stressors summarized from NMFS stressor matrix on 6th tab bottom right. Order reflects relative importance .</i>	1) Inadequate transport of juvenile salmonids.	2) Loss of riparian habitat and instream cover.	3) Predators and Invasive/non-native species.	4) Entrainment.	5) Loss of floodplain habitat (affects growth).	6) food web disruption affects growth.	7) Loss of tidal marsh affects growth

Sub-objectives: <i>Intended to address highest priority stressors.</i>	Maintain through Delta transport conditions for juvenile winter run salmon in normal, AN, and wet year types and improve through Delta transport conditions (flow -cfs or by what units?) for juvenile winter run salmon in BN, dry and CD water years, on 5 water year running average basis, normalized by water year type.	Create or enhance 5 miles of channel margin habitat along the Sacramento River or adjacent migratory corridors within 10 years of permit issuance, and 10 miles within 30 years.	Reduce predation on WR salmon juveniles by __% by ___ date from Sacramento to Rio Vista.	Reduce the effects (direct mortality) of entrainment in critical, dry and below normal water years by __% from powerplants and water diversions and do not increase entrainment in normal, AB and wet year types on 5 year averaged basis, normalized by water year type, within 20 years. Maintain these improvements through duration of permit.	Increase WR growth by increasing available activated floodplain habitat via increasing the indundation frequency of the Yolo Bypass by 50% for wet, AB and normal water year types (combined) starting in year 10 on 5 year water year running average basis, with benefits accruing equally among populations. (THIS IS PLACEHOLDER-NEED MODEL RESULTS TO INFORM THIS SUB-OBJECTIVE)	Implement sub-objectives #s 5 and 7. Improve Delta flows and residence time through implementation of sub-objective 1.	Increase winter run juvenile salmon rearing habitat associated with tidal marshes by restoring and/or enhancing a total of 12,000 acres of tidal marsh within the Cache slough complex ROA, Suisun Marsh ROA, and West Delta ROA within 10 years of permit issuance. Implement remainder of tidal marsh restoration per implementation schedule.
Conservation Measures:	CM1. North Delta Diversion with Hood Bypass criteria and other measures (includes cross channel closing); CM6. Non-Native Predator Control; CM7 Non-Physical Fish Barriers; CM9. Non-Native Aquatic Vegetation Control. CM10. Tidal Marsh Restoration (Suisun and Cache Slough ROAs). CM11. Channel Margin Habitat Enhancement (includes Sutter and Steamboat sloughs); CM12. Riparian Habitat Restoration; CM14 Fremont Wier/Yolo Bypass Habitat Improvements;						
Expected Outcome:							
Metrics:							